

## CLAIMS

What is claimed is:

1. A reconfigurable data communications system comprising:  
a removable optical backplane connector having a first end and a second end;  
a first data communications card having an optical port adapted to receive said first end  
of said removable optical backplane connector; and  
a switch fabric card having a plurality of optical ports adapted to receive said second end  
of said removable optical backplane connector.
2. The reconfigurable data communications system of claim 1 wherein said first data  
communications card further comprises a plurality of input ports adapted to receive input signals,  
said first data communications card providing said input signals at said optical port.
3. The reconfigurable data communications system of claim 1 wherein said first data  
communications card is a service card.
4. The reconfigurable data communications system of claim 2 wherein said input signals are  
electrical signals.
5. The reconfigurable data communications system of claim 2 wherein said input signals are  
optical signals.
6. The reconfigurable data communications system of claim 1 wherein said removable  
optical backplane connector is an optical fiber.

7. The reconfigurable data communications system of claim 1 wherein the removable optical backplane connector further comprises a transmit optical fiber and a receive optical fiber.
8. The reconfigurable data communications system of claim 1 wherein said optical port of said first data communications card comprises at least one optical transceiver.
9. The reconfigurable data communications system of claim 1 wherein said plurality of said optical ports of said switch fabric card are optical transceivers.
10. The reconfigurable data communications system of claim 1 wherein said first data communications card is disposed within a first chassis and said switch fabric card is disposed within a second chassis.
11. The reconfigurable data communications system of claim 1 wherein said first data communications card and said switch fabric card are disposed within a single chassis.
12. The reconfigurable data communications system of claim 1 wherein said first data communications card comprises a removable optical transceiver card.
13. The reconfigurable data communications system of claim 12 wherein said first data communications card further comprises a line card in electrical communication with said removable optical transceiver card.
14. A reconfigurable data communications system comprising:
  - a removable optical backplane connector having a first end and a second end;
  - a removable optical transceiver card having a first optical port adapted to receive said first end of said removable optical backplane connector;

a data communications card in electrical communication with said removable optical transceiver card; and

a switch fabric card having a plurality of optical ports adapted to receive said second end of said removable optical backplane connector.

15. The reconfigurable data communications system of claim 14 wherein said data communications card and said removable optical transceiver card are disposed within a first chassis and said switch fabric card is disposed within a second chassis.

16. The reconfigurable data communications system of claim 14 wherein said data communications card, said removable optical transceiver card, and said switch fabric card are disposed within a chassis.

17. A reconfigurable data communications system comprising:

a plurality of removable optical backplane connectors, each of said plurality of said removable optical backplane connectors having a first end and a second end;

a first data communications card having an optical port adapted to receive said first end of a first one of said plurality of said removable optical backplane connectors;

a second data communications card having an optical port adapted to receive said first end of a second one of said plurality of removable optical backplane connectors; and

a switch fabric card having a plurality of optical ports wherein a first one of said plurality of optical ports receives said second end of said first one of said plurality of said removable optical backplane connectors, and a second one of said plurality of optical ports receives said second end of said second one of said plurality of said removable optical backplane connectors.

18. A reconfigurable data communications system comprising:

a plurality of removable optical backplane connectors, each of said plurality of said removable optical backplane connectors having a first end and a second end;

a first data communications card comprising a line card and a removable optical transceiver card, said line card in electrical communication with said removable optical transceiver card, said removable optical transceiver card having an optical port adapted to receive said first end of a first one of said plurality of said removable optical backplane connectors;

a second data communications card comprising a line card and a removable optical transceiver card, said line card in electrical communication with said removable optical transceiver card, said removable optical transceiver card having an optical port adapted to receive said first end of a second one of said plurality of removable optical backplane connectors; and

a switch fabric card having a plurality of optical ports wherein a first one of said plurality of optical ports receives said second end of said first one of said plurality of said removable optical backplane connectors, and a second one of said plurality of optical ports receives said second end of said second one of said plurality of said removable optical backplane connectors.

19. The reconfigurable data communications system of claim 18 wherein said first data communications card, said second data communications card and said switch fabric card are disposed within a chassis.

20. A reconfigurable data communications system comprising;

means for optically connecting, said means for optically connecting having a first end and a second end;

means for data communication, said means for data communication receiving said first end of said means for optically connecting; and

means for data switching, said means for data switching receiving said second end of said means for optically connecting.

21. The reconfigurable data communications system of claim 20 wherein said means for optically connecting further comprises a plurality of means for optically connecting, each of said means for optically connecting having a first end and a second end, said means for data communication comprising a plurality of means for data communication, each of said plurality of means for data communication receiving said first end of one of said plurality of means for optically connecting, and said means for data switching receiving said second end of each of said plurality of means for optically connecting.